



SUCCESSFUL BLAST FURNACE RELINES

ENSURING CERTAINTY WHEN THE
STAKES ARE HIGH

DELIVERING ON CUSTOMER EXPECTATIONS

THE FORMULA FOR SUCCESS

KEY PROJECT FEATURES

When a blast furnace comes to the end of its campaign and a stop is planned for a reline, with hundreds of thousands of tonnes of production at stake, you need certainty and clarity on:

- Reline safety
- Reline duration
- Quality of the work

Primetals Technologies have decades of experience, having executed reline/revamp projects on many different furnaces all around the world, with a wide variety of work scopes and under many different contract models.

From our vast experience we have learned that without exceptional planning, reline projects can easily get out of control. Consequently, schedule overruns result in unnecessary and avoidable costs.

At the end of the day the project success primarily comes down to the detailed planning, the associated implementation and effective monitoring.

To ensure project success we have developed a simple yet powerful procedure of:

- Front-end planning
- Constructability programming

Used to the full, this results in smoother projects, lower costs, and on-time shutdowns.

We also know that a major contribution to safe and successful projects is the relationship developed

between us and our customer which has three vital components:

1. Culture of safety
2. Partnership working
3. Experience and capabilities

By listening intently to our customers' needs we understand that more than standard solutions are demanded. We bring our best people and knowledge to bear in offering advanced reline solutions that demonstrate innovation, creativity and entrepreneurial approaches, unrivalled in the industry.

Working globally and across cultures for many years has taught us the importance of ensuring our values are matched to our customer, whereby our skillsets are complimentary and that we create and embrace a 'winning relationship' for each project. We act 'as one' and recognize 'team' is not driven by and limited to who employs you - it is determined by a higher goal. We recognize the cost of failure and for both parties it is never acceptable.

A true partner is not simply one that claims the title - it must be earned.

“ Blast furnace rebuilds are dangerous, costly and complex.

Successful rebuilds do not happen by chance. They happen by design.”

Paul Freeman
Head of Blast Furnace Business
Primetals Technologies UK

YOU EXPECT ...

- Zero accidents
- Minimum downtime
- On-time completion
- Technological solutions
- Experienced, credible and reliable suppliers
- Proactive problem solving
- Budget achievement
- Innovation, creativity and entrepreneurial approaches



PLANNING FOR SAFETY

YOUR DISCUSSIONS START WITH SAFETY - AND SO DO OURS!



Tata Port Talbot No.5 Blast Furnace. Preparing to breach the furnace

CULTURE OF SAFETY

Blast furnace relines are dangerous projects with unpredictable demolition works, crews working at multiple-levels and work that is ongoing on a 24-hour basis. You need confidence that the work is planned with the safety of all involved at the forefront.

Creating an inclusive, joint team demands:

- The right project culture
- Combination of site, local and expert knowledge
- Trust across languages

In order that timescales are achievable safely, we plan for safety, regardless of the environment.

MAIN BENEFITS

- Zero injuries
- No delays due to safety issues, delivering no impact on:
 - Project budget
 - Overall project schedule
- Healthy project culture
- Delivering safely on complex tasks



PARTNERING FOR SUCCESS

WORKING TOGETHER TO ACHIEVE EXCEPTIONAL RESULTS



ArcelorMittal Tubarão No.1 Blast Furnace. Shell pre-assembly and gantry system

A SHARED GOAL

A rebuild is a unique opportunity to future-proof your blast furnace operations to achieve increasingly demanding conditions, but it also poses a complex challenge in meeting a diverse set of requirements.

Blast furnace operators recognize this and set high expectations in meeting their project goals.

Our vast experience in major re-build projects has taught us that the project is only successful if we really listen to the customer and work together. Operating as a unified team to develop the best solution - whether that is to reuse, repair or replace.

MAIN BENEFITS

- Embedding project safety culture
- Achieving on time delivery of the project
- Meeting the project budget
- Effective use of planned resources
- Use of best practices and specialist knowledge for the project



EXPERIENCE AND CAPABILITIES

A SAFE PAIR OF HANDS

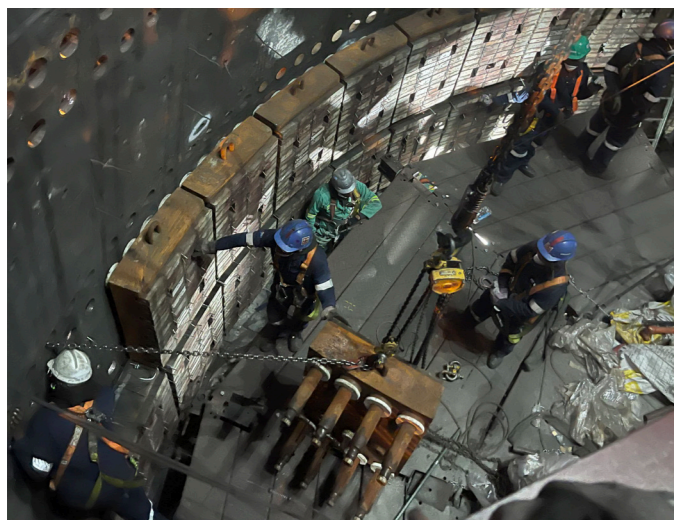


Rashtriya Ispat Nigam Limited, Visakhapatnam No.1 Blast Furnace

CONFIDENCE IN EXECUTION

Primetals Technologies have developed an approach to blast furnace relines and revamps to help guide you through the full process of planning, specification and execution of your projects. Blast furnace reline or revamp planning takes into consideration the following key points:

- Front-end planning – our 10-step process
- Pre-shut down planning and the constructability time schedule
- Understanding and managing the risks to the project schedule



MAIN BENEFITS OF THE 10-STEP PROCESS

- Early establishment of project objectives
- Clear and detailed definition of project scope
- Detailed and intelligent project timing and implementation of the constructability time schedule
- Selection of suitable construction methodology
- Development of site contracting model
- Detailed determination of schedule risks
- Primetals Technologies project 'readiness check' algorithm utilized prior to start of the reline outage to ensure:
 - Design and delivery is complete
 - Planning status known
 - Required pre-assembly and team training complete
 - Contractor understanding of the work planned and approved
 - Preparedness of all stakeholders

50 BLAST FURNACE RELINES



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